

Appl. No. 10/690,225

Amendment dated April 26, 2005

Reply to Office Action of February 1, 2005

Amendments to the Specification:

Please replace the Abstract with the following amended paragraph:

A displacement control device (1) is adapted to move a member (23) relative to a body (7). The displacement control device includes a drive means (2, 3) and an emergency actuator (8) arranged mechanically in series with the member. The actuator includes a housing (16) and a spring (14) arranged to act between the housing and the member. The improvement comprises: the actuator including a toggle linkage (9) acting between the housing and the spring, the toggle linkage having two pivotally-connected links (10, 11) that are adapted to be selectively moved between a collapsed position at which the links are arranged at an acute included angle, and an extended position at which the links are arranged at an obtuse included angle slightly less than 180°. The toggle linkage is arranged such that the spring will be more greatly compressed when the links are in the extended position than when the links are in the ~~compressed~~ collapsed position. The toggle linkage is arranged to be held in the extended position by a magnetically-actuated latching pin.

Please replace paragraph [0003] with the following amended paragraph:

[0003] In the inventive improvement, a toggle linkage (9) is provided between the link housing (16) and a spring-driven output member

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(23). When the spring is fully compressed, by causing the valve drive to move the valve pintle onto its seat, the toggle linkage is extended, and the two pivotally-connected links approach being in a straight line. In this condition, the toggle links can be constrained to hold the high spring compression force by means of a much smaller transverse force applied to one of the links by a solenoid-operated latching device. This device may take the form of a solenoid which inserts a latching pin to hold the linkage in its extended position, or, alternatively, may consist of a solenoid armature, directly carried on one of the toggle links, and brought into proximity to an electromagnetic pole structure when the linkage is extended.

Please replace paragraph [0005] with the following amended paragraph:

[0005] In the preferred form, the invention further comprises a latching means for constraining the links in the extended position as the housing is retracted away from the body to open the valve. The latching means may be magnetically operated. The latching means may include at least one latching pin (18). The latching means may include a solenoid having an armature and a return spring, and wherein the armature is associated with the latching pin such that the return spring will move the latching pin to an unlatched position in the absence of electrical power to the solenoid.

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Please combine paragraphs [0006] and [0007] as follows:

[0006] The drive means may include an externally-threaded rotatably-driven screw (2)-~~[0007]~~ and an internally-threaded nut connected to the housing. The screw may be matingly received in such nut such that rotation of the screw will cause linear movement of the housing relative to the body.

Please replace paragraph [0020] with the following amended paragraph:

[0020] FIG. 1 shows schematically a first form of the improved displacement control device 1 described above. A valve member or pintle 23 is moved along axis 24 through a working stroke between positions A and B with respect to seat 5 in a body 7 by a stem 4, in turn supported by extensible-link cartridge 16 and driven by a screw 3 engaged in a nut in cartridge 16. The valve stem 4 connects to a flange 13 to engage one end of spring 14 and loads it against a support surface 15 in the cartridge housing 16. Two symmetrically-arranged toggle linkages, severally indicated at 9, are connected between flange 13 and housing 16 end closure. The toggle linkages are comprised of links 10 and 11, which are folded to form an acute included angle.